

Supplemental Information

When fiction becomes fact: exaggerating host manipulation by parasites

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PART A: Online newspaper and magazine articles covering host manipulation that were used to create the word cloud in Figure 1A.

Methods:

Online newspapers and magazine articles were searched in the Google search engine using the combinations of the word “parasite” with “manipulation”, “mind”, “hijack”, or “zombie”. Then, articles were randomly selected within the first five pages of results. A text file was created to include the titles and headlines from all the selected articles. This file was then used to generate a word cloud with packages *tm*, *wordcloud*, and *RColorBrewer* in R version 3.6.3 (R Core Team, 2020).

Mind Control by Parasites (2006)

Bill Christensen, Live Science

<https://www.livescience.com/7019-mind-control-parasites.html>

Crazy eyes and mind control – the power of parasites (2014)

Micaela Jemison, Smithsonian Insider

<https://insider.si.edu/2014/11/crazy-eyes-mind-control-power-parasites/>

Mindsuckers (2014)

Carl Zimmer, National Geographic

<https://www.nationalgeographic.com/magazine/2014/11/mindsuckers/>

There Are Hundreds of Examples of Mind-Controlling Parasites (2014)

Colin Schultz, Smithsonian Magazine

<https://www.smithsonianmag.com/smart-news/there-are-hundreds-examples-mind-controlling-parasites-180950312/>

These Parasite Bugs Can Control Their Hosts' Brains From Inside (2014)

Jesus Diaz, Gizmodo

<https://www.gizmodo.com.au/2014/11/these-horrible-mindsucker-bugs-can-infect-and-control-their-hosts/>

6 Of Nature's Most Horrifying Mind-Controlling Parasites (2015)

Tom Chivers, BuzzFeed

<https://www.buzzfeed.com/tomchivers/parasites-that-control-your-brain>

Engrossing Portraits of Parasites and the Creatures They Zombify (2015)

Alyssa Coppelman, Wired

<https://www.wired.com/2015/12/anand-varma-mindsuckers/>

Meet the Parasites That Control Human Brains (2015)

Ben Thomas, Discover Magazine

<https://www.discovermagazine.com/planet-earth/meet-the-parasites-that-control-human-brains>

Ten sinister parasites that control their hosts' minds (2015)

Lucy Jones, *BBC Earth*

<http://www.bbc.com/earth/story/20150316-ten-parasites-that-control-minds>

The Truth About The Mind-Controlling Parasite You Can Get From Your Cat (2015)

Chelsea Harvey, *Business Insider Australia*

<https://www.businessinsider.com.au/toxoplasma-gondii-the-cat-brain-parasite-2015-1>

How mind-controlling parasites can get inside your head (2016)

Alex Ford, *The Conversation*

<https://theconversation.com/how-mind-controlling-parasites-can-get-inside-your-head-57131>

You Know Those Parasites That Control Our Brains? (2016)

Bradley van Pardon, *Scientific American*

<https://blogs.scientificamerican.com/guest-blog/you-know-those-parasites-that-control-our-brains/>

Watch a brain-hijacking parasite sneak its way in (2016)

Belinda Smith, *Cosmos Magazine*

<https://cosmosmagazine.com/biology/watch-brain-hijacking-parasite-sneak-its-way>

Invasion of the Brain Snatchers (2017)

David Suzuki, *The Nature of Things*

<https://www.cbc.ca/natureofthings/episodes/invasion-of-the-body-snatchers>

Parasite turns mice into mindless cat-fighting zombies by hijacking immune cells (2017)

Bob McDonald, *CBC Radio*

<https://www.cbc.ca/radio/quirks/parasite-turns-mice-into-mindless-cat-fighting-zombies-by-hijacking-immune-cells-1.4444512>

Puppeteer parasite that creates zombie ants hijacks their bodies – not brains (2017)

Hannah Osborne, *Newsweek*

<https://www.newsweek.com/parasite-zombie-ants-hijacks-bodies-not-brains-707816>

Meet 5 "zombie" parasites that mind-control their hosts (2018)

Mary Bates, *National Geographic*

<https://www.nationalgeographic.com/news/2018/10/141031-zombies-parasites-animals-science-halloween/>

Mind-altering parasite spread by cats could give humans more courage and overcome 'fear of failure', research suggests (2018)

Samuel Osborne, *The Independent*

<https://www.independent.co.uk/news/science/parasite-cat-faeces-mind-alter-humans-courage-fear-failure-toxoplasma-gondii-a8463436.html>

Parasites Can Mind-Control Animals Without Infecting Them (2018)

Ed Yong, *The Atlantic*

<https://www.theatlantic.com/science/archive/2018/06/what-tapeworms-really-want/563189/>

The brain worm that turns ants into zombies (2018)

Katie Pavid, Natural History Museum

<https://www.nhm.ac.uk/discover/news/2018/june/the-brain-worm-that-turns-ants-into-zombies.html>

The macabre world of mind-controlling parasites (2018)

Conn Hastings, *Frontiers Science News*

<https://blog.frontiersin.org/2018/05/15/psychology-parasites-insect-behavior/>

Zombie insects: Four ways parasites 'hijack' the brains of their unsuspecting hosts (2018)

Danielle Edwards, *National Post*

<https://nationalpost.com/news/world/zombie-insects-four-ways-parasites-hijack-the-brains-of-their-unsuspecting-hosts>

Creepy zombie snail flash green and orange as eyeball invading parasite force doomed creature to kill itself (2019)

Sean Keach, *The Sun*

<https://www.thesun.co.uk/tech/9713906/creepy-zombie-snail-eyeball-parasite-flashing/>

Inside the Forever War Against Parasites Trying To Control Our Brains (2019)

Joe Pappalardo, *Popular Mechanics*

<https://www.popularmechanics.com/science/health/a28941527/brain-parasites/>

Mind-altering parasite spread by CATS and carried by billions of people worldwide 'may lead to schizophrenia in humans' (2019)

Vanessa Chalmers, *Daily Mail Australia*

<https://www.dailymail.co.uk/health/article-6648545/Mind-altering-parasite-spread-CATS-lead-schizophrenia.html>

PART B: Scientific papers that were used to create the graph in Figure 1B. For each group, the search terms used in Web of Science are provided in parentheses.

Bodyguard (“*parasit*” AND (“bodyguard*” OR “body guard*” OR “body-guard*”))

1 Grosman, A.H., et al. (2008) Parasitoid Increases Survival of Its Pupae by Inducing Hosts to Fight Predators. *Plos One* 3

2 Janssen, A., et al. (2010) Context-dependent fitness effects of behavioral manipulation by a parasitoid. *Behavioral Ecology* 21, 33-36

3 Harvey, J.A., et al. (2011) The 'usurpation hypothesis' revisited: dying caterpillar repels attack from a hyperparasitoid wasp. *Animal Behaviour* 81, 1281-1287

4 Maure, F., et al. (2011) The cost of a bodyguard. *Biol Letters* 7, 843-846

5 Harvey, J.A., et al. (2013) A bodyguard or a tastier meal? Dying caterpillar indirectly protects parasitoid cocoons by offering alternate prey to a generalist predator. *Entomologia Experimentalis Et Applicata* 149, 219-228

6 Maure, F., et al. (2013) Bodyguard manipulation in a multipredator context: Different processes, same effect. *Behavioural Processes* 99, 81-86

7 Maure, F., et al. (2013) Diversity and evolution of bodyguard manipulation. *J Exp Biol* 216, 36-42

8 Maure, F., et al. (2014) Host behaviour manipulation as an evolutionary route towards attenuation of parasitoid virulence. *J Evolution Biol* 27, 2871-2875

9 Mohan, P. and Sinu, P.A. (2017) Parasitoid wasp usurps its host to guard its pupa against hyperparasitoids and induces rapid behavioral changes in the parasitized host. *Plos One* 12

10 Libersat, F., et al. (2018) Mind Control: How Parasites Manipulate Cognitive Functions in Their Insect Hosts. *Frontiers in Psychology* 9

11 Arias-Penna, D.C., et al. (2019) A species-level taxonomic review and host associations of *Glyptapanteles* (Hymenoptera, Braconidae, Microgastrinae) with an emphasis on 136 new reared species from Costa Rica and Ecuador. *Zookeys*, 1-685

Bodysnatcher (“*parasit*” AND (“bodysnatch*” OR “body snatch*” OR “body-snatch*”))

1 Furlow, B. (1999) The body snatchers - Parasites. *New Scientist* 163, 42-46

2 Lafferty, K.D. and Kuris, A.M. (2009) Parasitic castration: the evolution and ecology of body snatchers. *Trends in Parasitology* 25, 564-572

3 Lefevre, T., et al. (2009) Invasion of the Body Snatchers: The Diversity and Evolution of Manipulative Strategies in Host-Parasite Interactions. In *Advances in Parasitology*, Vol 68: Natural History of Host-Parasite Interactions (Webster, J.P., ed), pp. 45-+

4 Hechinger, R.F. (2010) Mortality affects adaptive allocation to growth and reproduction: field evidence from a guild of body snatchers. *Bmc Evolutionary Biology* 10

5 Harmon, K. (2012) Body-Snatching Flies. *Scientific American* 306, 14-14

6 Belgrad, B.A. and Smith, N.F. (2014) Effects of predation and parasitism on climbing behavior of the marine snail, *Cerithidea scalaniformis*. *Journal of Experimental Marine Biology and Ecology* 458, 20-26

7 Stanyukovich, M. (2016) Disgust and Milk of Kindness: A Review of Valerie Curtis, Don't Look, Don't Touch, Don't Eat: The Science behind Revulsion. Chicago: The University of Chicago Press, 2013, 184 pp. *Antropologicheskii forum*, 247-268

Hijack (“*parasit*” AND “hijack*” NOT (“bacteri*” OR “viru*” OR “viral*”))

1 Beverley, S.M. (1996) Hijacking the cell: Parasites in the driver's seat. *Cell* 87, 787-789

2 Cezilly, F., et al. (2000) Conflict between co-occurring manipulative parasites? An experimental study of the joint influence of two acanthocephalan parasites on the behaviour of *Gammarus pulex*. *Parasitology* 120, 625-630

3 Aliberti, J. (2005) Host persistence: Exploitation of anti-inflammatory pathways by *Toxoplasma gondii*. *Nature Reviews Immunology* 5, 162-170

4 Engler, J.D., et al. (2005) Loss of susceptibility as an alternative for nematode resistance. *Current Opinion in Biotechnology* 16, 112-117

5 Chen, M. and Gerlier, D. (2006) Viral hijacking of cellular ubiquitination pathways as an anti-innate immunity strategy. *Viral Immunology* 19, 349-362

6 Courret, N., et al. (2006) CD11c- and CD11b-expressing mouse leukocytes transport single *Toxoplasma gondii* tachyzoites to the brain. *Blood* 107, 309-316

7 Han, Q., et al. (2006) Evolution of two alanine glyoxylate aminotransferases in mosquito. *Biochemical Journal* 397, 473-481

8 Sorin, M. and Kalpana, G.V. (2006) Dynamics of virus-host interplay in HIV-1 replication. *Current Hiv Research* 4, 117-130

9 Antalis, T.M., et al. (2007) Mechanisms of disease: protease functions in intestinal mucosal pathobiology. *Nature Clinical Practice Gastroenterology & Hepatology* 4, 393-402

10 Libersat, F. and Gal, R. (2007) Neuro-manipulation of hosts by parasitoid wasps.

11 Silvie, O., et al. (2008) Interactions of the malaria parasite and its mammalian host. *Current Opinion in Microbiology* 11, 352-359

12 Chandramohanadas, R., et al. (2009) Apicomplexan Parasites Co-Opt Host Calpains to Facilitate Their Escape from Infected Cells. *Science* 324, 794-797

13 Cooper, W.R. and Rieske, L.K. (2009) Woody Stem Galls Interact With Foliage to Affect Community Associations. *Environmental Entomology* 38, 417-424

14 Grunewald, W., et al. (2009) Parasitic Nematodes Modulate PIN-Mediated Auxin Transport to Facilitate Infection. *Plos Pathogens* 5

- 15 Leavy, O. (2009) ANTIGEN PRESENTATION Parasite hijacking. *Nature Reviews Microbiology* 7
- 16 Cserti-Gazdewich, C.M. (2010) *Plasmodium falciparum* malaria and carbohydrate blood group evolution. In *State of the Art Presentations* (Mayr, W.R., ed), pp. 256-266
- 17 Engler, J.d.A., et al. (2010) Plant actin cytoskeleton re-modeling by plant parasitic nematodes. *Plant Signaling & Behavior* 5, 213-217
- 18 Hakimi, M.-A. and Menard, R. (2010) Do apicomplexan parasites hijack the host cell microRNA pathway for their intracellular development? *F1000 biology reports* 2
- 19 DosReis, G.A. (2011) Evasion of immune responses by *Trypanosoma cruzi*, the etiological agent of Chagas disease. *Brazilian Journal of Medical and Biological Research* 44, 84-90
- 20 Sattler, J.M., et al. (2011) Actin regulation in the malaria parasite. *European Journal of Cell Biology* 90, 966-971
- 21 Simon, N., et al. (2011) Malaria parasites hijack human factor H to protect from complement-mediated lysis in the mosquito midgut. *International Journal of Medical Microbiology* 301, 14-14
- 22 Fuks, J.M., et al. (2012) GABAergic Signaling Is Linked to a Hypermotile Phenotype in Dendritic Cells Infected by *Toxoplasma gondii*. *Plos Pathogens* 8
- 23 Loussert, C., et al. (2012) Correlative Light and Electron Microscopy in Parasite Research. In *Correlative Light and Electron Microscopy* (MullerReichert, T. and Verkade, P., eds), pp. 59-73
- 24 Skariah, S., et al. (2012) Discovery of a Novel *Toxoplasma gondii* Conoid-Associated Protein Important for Parasite Resistance to Reactive Nitrogen Intermediates. *Journal of Immunology* 188, 3404-3415
- 25 Srivastav, S., et al. (2012) *Leishmania donovani* Exploits Host Deubiquitinating Enzyme A20, a Negative Regulator of TLR Signaling, To Subvert Host Immune Response. *Journal of Immunology* 189, 924-934
- 26 Feng, C., et al. (2013) The Galectin CvGal1 from the Eastern Oyster (*Crassostrea virginica*) Binds to Blood Group A Oligosaccharides on the Hemocyte Surface. *Journal of Biological Chemistry* 288, 24394-24409
- 27 Kurz, S., et al. (2013) Hemocytes and Plasma of the Eastern Oyster (*Crassostrea virginica*) Display a Diverse Repertoire of Sulfated and Blood Group A-modified N-Glycans. *Journal of Biological Chemistry* 288, 24410-24428
- 28 Razakandrainibe, R., et al. (2013) Crossing the wall: The opening of endothelial cell junctions during infectious diseases. *International Journal of Biochemistry & Cell Biology* 45, 1165-1173
- 29 Romano, J.D., et al. (2013) *Toxoplasma gondii* salvages sphingolipids from the host Golgi through the rerouting of selected Rab vesicles to the parasitophorous vacuole. *Molecular Biology of the Cell* 24, 1974-1995
- 30 Sanchez Valdez, F.J., et al. (2013) *Trypanosoma cruzi* carrying a monoallelic deletion of the calreticulin (TcCRT) gene are susceptible to complement mediated killing and defective in their metacyclogenesis. *Molecular Immunology* 53, 198-205
- 31 Boggiatto, P.M., et al. (2014) Targeted extracellular signal-regulated kinase activation mediated by *Leishmania amazonensis* requires MP1 scaffold. *Microbes and Infection* 16, 328-336
- 32 Cabrera, J., et al. (2014) NEMATIC: a simple and versatile tool for the in silico analysis of plant-nematode interactions. *Molecular Plant Pathology* 15, 627-636
- 33 Coppens, I. (2014) Exploitation of auxotrophies and metabolic defects in *Toxoplasma* as therapeutic approaches. *International Journal for Parasitology* 44, 109-120
- 34 Ibrahim, H.M., et al. (2014) Overproduction of *Toxoplasma gondii* cyclophilin-18 regulates host cell migration and enhances parasite dissemination in a CCR5-independent manner. *Bmc Microbiology* 14
- 35 Kennedy, A.T., et al. (2014) Hijacking the complement regulator factor H - An evasion strategy for malaria parasites? *Molecular Immunology* 61, 269-270
- 36 Kerjaschki, D. (2014) The lymphatic vasculature revisited. *Journal of Clinical Investigation* 124, 874-877

- 37 Medjkane, S., et al. (2014) Theileria induces oxidative stress and HIF1 alpha activation that are essential for host leukocyte transformation. *Oncogene* 33, 1809-1817
- 38 Ahl, V., et al. (2015) Retrotransposition and Crystal Structure of an Alu RNP in the Ribosome-Stalling Conformation. *Molecular Cell* 60, 715-727
- 39 Broadbent, K.M., et al. (2015) Strand-specific RNA sequencing in *Plasmodium falciparum* malaria identifies developmentally regulated long non-coding RNA and circular RNA. *Bmc Genomics* 16
- 40 Cabrera, J., et al. (2015) Developmental Pathways Mediated by Hormones in Nematode Feeding Sites. In *Plant Nematode Interactions: A View on Compatible Interrelationships*, Vol 73 (Escobar, C. and Fenoll, C., eds), pp. 167-188
- 41 Cheeseman, K. and Weitzman, J.B. (2015) Host-parasite interactions: an intimate epigenetic relationship. *Cellular Microbiology* 17, 1121-1132
- 42 Crauwels, P., et al. (2015) Apoptotic-like *Leishmania* exploit the host's autophagy machinery to reduce T-cell-mediated parasite elimination. *Autophagy* 11, 285-297
- 43 Feng, C., et al. (2015) Galectin CvGal2 from the Eastern Oyster (*Crassostrea virginica*) Displays Unique Specificity for ABH Blood Group Oligosaccharides and Differentially Recognizes Sympatric *Perkinsus* Species. *Biochemistry* 54, 4711-4730
- 44 Howe, G.A. and Herde, M. (2015) Interaction of plant defense compounds with the insect gut: new insights from genomic and molecular analyses. *Curr Opin Insect Sci* 9, 62-68
- 45 Marsolier, J., et al. (2015) *Theileria* parasites secrete a prolyl isomerase to maintain host leukocyte transformation. *Nature* 520, 378-+
- 46 Nhat My, T., et al. (2015) Function of Root-Knot Nematode Effectors and Their Targets in Plant Parasitism. In *Plant Nematode Interactions: A View on Compatible Interrelationships*, Vol 73 (Escobar, C. and Fenoll, C., eds), pp. 293-324
- 47 Quintero, C.A., et al. (2015) Rho GTPases as pathogen targets: Focus on curable sexually transmitted infections. *Small GTPases* 6, 108-118
- 48 Roffler, S., et al. (2015) The making of a genomic parasite - the *Mothra* family sheds light on the evolution of Helitrons in plants. *Mobile DNA* 6
- 49 Terrazas, C., et al. (2015) Uncovering *Leishmania*-macrophage interplay using imaging flow cytometry. *Journal of Immunological Methods* 423, 93-98
- 50 Yan, C. and Xie, D. (2015) Jasmonate in plant defence: sentinel or double agent? *Plant Biotechnology Journal* 13, 1233-1240
- 51 Charpentier, T., et al. (2016) Hypoxia inducible factor 1 alpha: A critical factor for the immune response to pathogens and *Leishmania*. *Cellular Immunology* 309, 42-49
- 52 Favery, B., et al. (2016) Gall-forming root-knot nematodes hijack key plant cellular functions to induce multinucleate and hypertrophied feeding cells. *J Insect Physiol* 84, 60-69
- 53 Galluzzi, L., et al. (2016) *Leishmania infantum* Induces Mild Unfolded Protein Response in Infected Macrophages. *Plos One* 11
- 54 He, J.-J., et al. (2016) Proteomic Profiling of Mouse Liver following Acute *Toxoplasma gondii* Infection. *Plos One* 11
- 55 He, J.-J., et al. (2016) Transcriptional changes of mouse splenocyte organelle components following acute infection with *Toxoplasma gondii*. *Experimental Parasitology* 167, 7-16
- 56 Jimenez-Ruiz, E., et al. (2016) Vacuolar protein sorting mechanisms in apicomplexan parasites. *Molecular and Biochemical Parasitology* 209, 18-25
- 57 Kennedy, A.T., et al. (2016) Hijacking host complement regulators: Mechanisms of *Plasmodium falciparum* complement evasion. *Immunobiology* 221, 1155-1155
- 58 Kennedy, A.T., et al. (2016) Recruitment of Factor H as a Novel Complement Evasion Strategy for Blood-Stage *Plasmodium falciparum* Infection. *Journal of Immunology* 196, 1239-1248
- 59 Lievin-Le Moal, V. and Loiseau, P.M. (2016) *Leishmania* hijacking of the macrophage intracellular compartments. *Febs Journal* 283, 598-607

- 60 Robillard, E., et al. (2016) Experimental evolution reveals hyperparasitic interactions among transposable elements. *P Natl Acad Sci USA* 113, 14763-14768
- 61 Shivakumara, T.N., et al. (2016) RNAi-induced silencing of an effector confers transcriptional oscillation in another group of effectors in the root-knot nematode, *Meloidogyne incognita*. *Nematology* 18, 857-S852
- 62 Weidner, J.M., et al. (2016) Migratory activation of parasitized dendritic cells by the protozoan *Toxoplasma gondii* 14-3-3 protein. *Cellular Microbiology* 18, 1537-1550
- 63 Bayer-Santos, E., et al. (2017) Non-coding RNAs in Host-Pathogen Interactions: Subversion of Mammalian Cell Functions by Protozoan Parasites. *Frontiers in Microbiology* 8
- 64 Cheeseman, K.M. and Weitzman, J.B. (2017) What makes a parasite "transforming"? Insights into cancer from the agents of an exotic pathology, *Theileria* spp. *Bulletin de la Societe de pathologie exotique* (1990) 110, 55-60
- 65 Gendlina, I., et al. (2017) Modification of the Host Epigenome by Parasitic Protists. In *Epigenetics of Infectious Diseases* (Doerfler, W. and Casadesus, J., eds), pp. 189-220
- 66 Kennedy, A.T., et al. (2017) Recruitment of Human C1 Esterase Inhibitor Controls Complement Activation on Blood Stage *Plasmodium falciparum* Merozoites. *Journal of Immunology* 198, 4728-4737
- 67 Lelliott, P.M., et al. (2017) Erythrocyte beta spectrin can be genetically targeted to protect mice from malaria. *Blood Advances* 1, 2624-2636
- 68 Meireles, P., et al. (2017) Uptake and metabolism of arginine impact *Plasmodium* development in the liver. *Sci Rep-Uk* 7
- 69 Mueller, S. (2017) RESPECT FOR AUTONOMY IN LIGHT OF NEUROPSYCHIATRY. *Bioethics* 31, 360-367
- 70 Nick, P. (2017) Hijacking cellular signals. *Protoplasma* 254, 2053-2054
- 71 Telahigue, K., et al. (2017) The parasitic copepod *Peroderma cylindricum* Heller, 1865 (Copepoda: Pennellidae) and its host *Sardina pilchardus* (Walbaum, 1792): trophic relationships as revealed by fatty acid profiles. *Journal of Crustacean Biology* 37, 453-457
- 72 Zerka, A., et al. (2017) *Plasmodium reichenowi* EBA-140 merozoite ligand binds to glycophorin D on chimpanzee red blood cells, shedding new light on origins of *Plasmodium falciparum*. *Parasites & Vectors* 10
- 73 Gruszczyk, J., et al. (2018) Cryo-EM structure of an essential *Plasmodium vivax* invasion complex. *Nature* 559, 135-+
- 74 He, H., et al. (2018) Characterization of a *Toxoplasma* effector uncovers an alternative GSK3/beta-catenin-regulatory pathway of inflammation. *Elife* 7
- 75 Jiao, J., et al. (2018) Artemisinin and *Artemisia annua* leaves alleviate *Eimeria tenella* infection by facilitating apoptosis of host cells and suppressing inflammatory response. *Veterinary Parasitology* 254, 172-177
- 76 Martinez-Lopez, M., et al. (2018) *Leishmania* Hijacks Myeloid Cells for Immune Escape. *Frontiers in Microbiology* 9
- 77 Posfai, D., et al. (2018) *Plasmodium* parasite exploits host aquaporin-3 during liver stage malaria infection. *Plos Pathogens* 14
- 78 van Beek, A.E., et al. (2018) Complement Factor H Levels Associate With *Plasmodium falciparum* Malaria Susceptibility and Severity. *Open Forum Infectious Diseases* 5
- 79 Afrin, F., et al. (2019) *Leishmania*-Host Interactions-An Epigenetic Paradigm. *Frontiers in Immunology* 10
- 80 Arvidson, R., et al. (2019) Parasitoid Jewel Wasp Mounts Multipronged Neurochemical Attack to Hijack a Host Brain. *Molecular & Cellular Proteomics* 18, 99-114
- 81 Baral, A. (2019) Parasitic worms hijack key plant protein to build their nest. *Physiologia Plantarum* 165, 2-3

- 82 Bhandage, A.K. and Barragan, A. (2019) Calling in the CaValry-Toxoplasma gondii Hijacks GABAergic Signaling and Voltage-Dependent Calcium Channel Signaling for Trojan horse-Mediated Dissemination. *Frontiers in Cellular and Infection Microbiology* 9
- 83 Deffieu, M.S., et al. (2019) The Toxoplasma gondii dense granule protein TgGRA3 interacts with host Golgi and dysregulates anterograde transport. *Biology Open* 8
- 84 Drewry, L.L. and Sibley, L.D. (2019) The hitchhiker's guide to parasite dissemination. *Cellular Microbiology* 21
- 85 Franchet, A., et al. (2019) Phosphatidic acid as a limiting host metabolite for the proliferation of the microsporidium *Tubulinosema ratisbonensis* in *Drosophila* flies. *Nature Microbiology* 4, 645-655
- 86 Hammarton, T. (2019) Who Needs a Contractile Actomyosin Ring? The Plethora of Alternative Ways to Divide a Protozoan Parasite. *Frontiers in Cellular and Infection Microbiology* 9
- 87 Khattab, A., et al. (2019) N-terminal region of *Plasmodium falciparum* circumsporozoite protein mediates immune evasion by hijacking a complement inhibitor. *European Journal of Immunology* 49, 173-173
- 88 Marsolier, J., et al. (2019) Secreted parasite Pin1 isomerase stabilizes host PKM2 to reprogram host cell metabolism. *Communications biology* 2, 152-152
- 89 Marsolier, J., et al. (2019) Secreted parasite Pin1 isomerase stabilizes host PKM2 to reprogram host cell metabolism. *Communications Biology* 2
- 90 Marsolier, J., et al. (2019) Secreted parasite Pin1 isomerase stabilizes host PKM2 to reprogram host cell metabolism. *Communications biology* 2, 152-152
- 91 Mejias, J., et al. (2019) Plant Proteins and Processes Targeted by Parasitic Nematode Effectors. *Frontiers in Plant Science* 10
- 92 Olafsson, E.B., et al. (2019) TIMP-1 promotes hypermigration of Toxoplasma-infected primary dendritic cells via CD63-ITGB1-FAK signaling. *Journal of Cell Science* 132
- 93 Raphemot, R., et al. (2019) Discovery of Druggable Host Factors Critical to Plasmodium Liver-Stage Infection. *Cell Chemical Biology* 26, 1253-+
- 94 Sabou, M., et al. (2019) Toxoplasma gondii ROP16 kinase silences the cyclin B1 gene promoter by hijacking host cell UHRF1-dependent epigenetic pathways. *Cellular and molecular life sciences : CMLS*
- 95 Schultz, J.C., et al. (2019) A galling insect activates plant reproductive programs during gall development. *Sci Rep-Uk* 9
- 96 Vallet, M., et al. (2019) The oomycete *Lagenisma coscinodisci* hijacks host alkaloid synthesis during infection of a marine diatom. *Nature Communications* 10

Puppeteer (“*parasit*” AND “puppet”*)

- 1 Hurst, L.D. and Randerson, J.P. (2002) Parasitic sex puppeteers. *Scientific American* 286, 56-61
- 2 Hechinger, R.F., et al. (2009) How large is the hand in the puppet? Ecological and evolutionary factors affecting body mass of 15 trematode parasitic castrators in their snail host. *Evol Ecol* 23, 651-667
- 3 Adamo, S.A. (2012) The strings of the puppet master: how parasites change host behavior.
- 4 Pennisi, E. (2014) ECOLOGY Parasitic Puppeteers Begin To Yield Their Secrets. *Science* 343, 239-239
- 5 Dheilly, N.M., et al. (2015) Who is the puppet master? Replication of a parasitic wasp-associated virus correlates with host behaviour manipulation. *Proceedings of the Royal Society B-Biological Sciences* 282
- 6 Stilling, R.M., et al. (2016) The brain's Geppetto-microbes as puppeteers of neural function and behaviour? *Journal of Neurovirology* 22, 14-21
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Zombie (“*parasit*” AND “zombi”*)

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